

WHAT IS CLAIMED:

1. A method for producing a gummy stem blight resistant *Cucumis melo* hybrid seed comprising:
 - 5 crossing a first *Cucumis melo* plant with a second *Cucumis melo* plant to yield a first generation hybrid seed, wherein said first plant is either resistant to gummy stem blight or not resistant to gummy stem blight and the second plant is resistant to gummy stem blight.
 2. The method according to claim 1, wherein the first *Cucumis*
10 *melo* plant is not resistant to gummy stem blight and is selected from the group consisting of *C. melo cantalupensis*, *C. melo indorus*, and *C. melo flexuosus*.
 3. The method according to claim 1, wherein the first *Cucumis*
melo plant is not resistant to gummy stem blight and is selected from the group consisting of Cornell ZPPM 339, TAM Uvalde, UC Topmark, Galia type, Ananas
15 type, and Oro Rico.
 4. The method according to claim 1, wherein the first *Cucumis*
melo plant is resistant to gummy stem blight and is selected from the group consisting of U.S.D.A. Plant Introduction ("PI") accession PI 157082, PI 511890, PI 482399, PI 482398, and PI 140471.
 - 20 5. The method according to claim 1, wherein the second *Cucumis melo* plant is selected from the group consisting of U.S.D.A. Plant Introduction ("PI") accession PI 157082, PI 511890, PI 482399, PI 482398, and PI 140471.
 6. The method according to claim 1, wherein the first *Cucumis*
25 *melo* plant is resistant to gummy stem blight and contains at least one resistance gene for gummy stem blight.
 7. The method according to claim 6, wherein said resistance gene is selected from the group consisting of a dominant resistance gene and a recessive resistance gene.
 - 30 8. The method according to claim 7, wherein said resistance gene is a dominant resistance gene selected from the group consisting of *Gsb1*, *Gsb2*, *Gsb4*, and *Gsb5*.

9. The method according to claim 7, wherein said resistance gene is a *gsb3* recessive resistance gene.

10. The method according to claim 1, wherein the second *Cucumis melo* plant contains at least one resistance gene for gummy stem blight.

5 11. The method according to claim 10, wherein said resistance gene is selected from the group consisting of a dominant resistance gene and a recessive resistance gene.

12. The method according to claim 11, wherein said dominant resistance gene is selected from the group consisting of *Gsb1*, *Gsb2*, *Gsb4*, and
10 *Gsb5*.

13. The method according to claim 11, wherein said resistance gene is a *gsb3* recessive resistance gene.

14. The method according to claim 1, wherein both said first *Cucumis melo* plant and said second *Cucumis melo* plant contain at least one
15 resistance gene for gummy stem blight.

15. The method according to claim 14, wherein said resistance gene is selected from the group consisting of a dominant resistance gene and a recessive resistance gene.

16. The method according to claim 14, wherein said dominant resistance gene is selected from the group consisting of *Gsb1*, *Gsb2*, *Gsb4*, and
20 *Gsb5*.

17. The method according to claim 14, wherein said resistance gene is a *gsb3* recessive resistance gene.

18. The method according to claim 1 further comprising:
25 growing the first generation hybrid seed to yield a first generation resistant *Cucumis melo* hybrid plant.

19. The method according to claim 18 further comprising:
using germplasm derived from the hybrid plant in a plant breeding program to yield gummy stem blight resistant *Cucumis melo* hybrid seeds.

20. The method according to claim 19, wherein said breeding program comprises traditional plant breeding techniques selected from the group consisting of pedigree breeding, selfing, intercrossing, and backcrossing.

21. The method according to claim 19, wherein said breeding program comprises tissue culture techniques.

22. A gummy stem blight resistant *Cucumis melo* hybrid seed, prepared by a method comprising:

5 crossing a first *Cucumis melo* plant with a second *Cucumis melo* plant to yield a first generation hybrid seed, wherein said first plant is either resistant to gummy stem blight or not resistant to gummy stem blight and the second plant is resistant to gummy stem blight.

23. The gummy stem blight resistant *Cucumis melo* hybrid seed
10 according to claim 22, wherein the first *Cucumis melo* plant is not resistant to gummy stem blight and is selected from the group consisting of *C. melo cantalupensis*, *C. melo indorus*, and *C. melo flexuosus*.

24. The gummy stem blight resistant *Cucumis melo* hybrid seed
15 according to claim 22, wherein the first *Cucumis melo* plant is not resistant to gummy stem blight and is selected from the group consisting of Cornell ZPPM 339, TAM Uvalde, UC Topmark, Galia type, Ananas type, and Oro Rico.

25. The gummy stem blight resistant *Cucumis melo* hybrid seed
20 according to claim 22, wherein the first *Cucumis melo* plant is resistant to gummy stem blight and is selected from the group consisting of U.S.D.A. Plant Introduction ("PI") accession PI 157082, PI 511890, PI 482399, PI 482398, and PI 140471.

26. The gummy stem blight resistant *Cucumis melo* hybrid seed
25 according to claim 22, wherein the second plant is a gummy stem blight resistant *Cucumis melo* plant selected from the group consisting of U.S.D.A. Plant Introduction ("PI") accession PI 157082, PI 511890, PI 482399, PI 482398, and PI 140471.

27. The gummy stem blight resistant *Cucumis melo* hybrid seed
according to claim 22, wherein the first *Cucumis melo* plant contains a resistance gene for gummy stem blight.

30 28. The gummy stem blight resistant *Cucumis melo* hybrid seed according to claim 27, wherein said resistance gene is selected from the group consisting of a dominant resistance gene and a recessive resistance gene.

29. The gummy stem blight resistant *Cucumis melo* hybrid seed according to claim 28, wherein said dominant resistance gene is selected from the group consisting of *Gsb1*, *Gsb2*, *Gsb4*, and *Gsb5*.

30. The gummy stem blight resistant *Cucumis melo* hybrid seed
5 according to claim 28, wherein said resistance gene is a *gsb3* recessive resistance gene.

31. The gummy stem blight resistant *Cucumis melo* hybrid seed according to claim 22, wherein the second *Cucumis melo* plant contains a resistance gene for gummy stem blight.

10 32. The gummy stem blight resistant *Cucumis melo* hybrid seed according to claim 31, wherein said resistance gene is selected from the group consisting of a dominant resistance gene and a recessive resistance gene.

33. The gummy stem blight resistant *Cucumis melo* hybrid seed according to claim 32, wherein said dominant resistance gene is selected from the
15 group consisting of *Gsb1*, *Gsb2*, *Gsb4*, and *Gsb5*.

34. The gummy stem blight resistant *Cucumis melo* hybrid seed according to claim 32, wherein said resistance gene is a *gsb3* recessive resistance gene.

35. The gummy stem blight resistant *Cucumis melo* hybrid seed
20 according to claim 22, wherein both said first *Cucumis melo* plant and said second *Cucumis melo* plant contain at least one resistance gene for gummy stem blight.

36. The gummy stem blight resistant *Cucumis melo* hybrid seed according to claim 35, wherein said resistance gene is selected from the group consisting of a dominant resistance gene and a recessive resistance gene.

25 37. The gummy stem blight resistant *Cucumis melo* hybrid seed according to claim 36, wherein said dominant resistance gene is selected from the group consisting of *Gsb1*, *Gsb2*, *Gsb4*, and *Gsb5*.

38. The gummy stem blight resistant *Cucumis melo* hybrid seed according to claim 36, wherein said resistance gene is a *gsb3* recessive resistance
30 gene.

39. A gummy stem blight resistant *Cucumis melo* hybrid plant, or its parts, produced by the seed of claim 22.

40. Pollen of the hybrid plant according to claim 39.

41. An ovule of the hybrid plant according to claim 39.

42. A tissue culture of regenerable cells of the hybrid plant according to claim 39, wherein the tissue culture regenerates multiple progeny plants capable of expressing all the morphological and physiological characteristics of said hybrid plant.

43. A gummy stem blight resistant *Cucumis melo* progeny plant, or its parts, regenerated from the tissue culture of claim 42.

44. A gummy stem blight resistant *Cucumis melo* offspring plant, or its parts, wherein at least one ancestor of said offspring plant is the hybrid plant, or its parts, of claim 39.

45. A gummy stem blight resistant *Cucumis melo* hybrid plant, prepared by a method comprising:

crossing a first *Cucumis melo* plant with a second *Cucumis melo* plant to yield a first generation hybrid seed, wherein said first plant is either resistant to gummy stem blight or not resistant to gummy stem blight and said second plant is resistant to gummy stem blight; and

growing the first generation hybrid seed to yield a first generation resistant *Cucumis melo* hybrid plant.

46. The gummy stem blight resistant *Cucumis melo* hybrid plant according to claim 45, wherein the first *Cucumis melo* plant is not resistant to gummy stem blight and is selected from the group consisting of *C. melo cantalupensis*, *C. melo indorus*, and *C. melo flexuosus*.

47. The gummy stem blight resistant *Cucumis melo* hybrid plant according to claim 45, wherein the first *Cucumis melo* plant is not resistant to gummy stem blight and is selected from the group consisting of Cornell ZPPM 339, TAM Uvalde, UC Topmark, Galia type, Ananas type, and Oro Rico.

48. The gummy stem blight resistant *Cucumis melo* hybrid plant according to claim 45, wherein the first *Cucumis melo* plant is resistant to gummy stem blight and is selected from the group consisting of U.S.D.A. Plant Introduction ("PI") accession PI 157082, PI 511890, PI 482399, PI 482398, and PI 140471.

49. The gummy stem blight resistant *Cucumis melo* hybrid plant according to claim 45, wherein the second plant is a gummy stem blight

resistant *Cucumis melo* plant selected from the group consisting of U.S.D.A. Plant Introduction ("PI") accession PI 157082, PI 511890, PI 482399, PI 482398, and PI 140471.

50. The gummy stem blight resistant *Cucumis melo* hybrid
5 plant according to claim 45, wherein the first *Cucumis melo* plant is resistant to gummy stem blight and contains at least one resistance gene for gummy stem blight.

51. The gummy stem blight resistant *Cucumis melo* hybrid
10 plant according to claim 50, wherein said resistance gene is selected from the group consisting of a dominant resistance gene and a recessive resistance gene.

52. The gummy stem blight resistant *Cucumis melo* hybrid
plant according to claim 51, wherein said dominant resistance gene is selected from the group consisting of *Gsb1*, *Gsb2*, *Gsb4*, and *Gsb5*.

53. The gummy stem blight resistant *Cucumis melo* hybrid
15 plant according to claim 51, wherein said resistance gene is a *gsb3* recessive resistance gene.

54. The gummy stem blight resistant *Cucumis melo* hybrid
20 plant according to claim 45, wherein the second *Cucumis melo* plant is resistant to gummy stem blight and contains at least one resistance gene for gummy stem blight.

55. The gummy stem blight resistant *Cucumis melo* hybrid
plant according to claim 54, wherein said resistance gene is selected from the group consisting of a dominant resistance gene and a recessive resistance gene.

56. The gummy stem blight resistant *Cucumis melo* hybrid
25 plant according to claim 55, wherein said dominant resistance gene is selected from the group consisting of *Gsb1*, *Gsb2*, *Gsb4*, and *Gsb5*.

57. The gummy stem blight resistant *Cucumis melo* hybrid
plant according to claim 55, wherein said resistance gene is a *gsb3* recessive resistance gene.

58. The gummy stem blight resistant *Cucumis melo* hybrid
30 plant according to claim 45, wherein both said first *Cucumis melo* plant and said second *Cucumis melo* plant contain at least one resistance gene for gummy stem blight.

59. The gummy stem blight resistant *Cucumis melo* hybrid plant according to claim 58, wherein said resistance gene is selected from the group consisting of a dominant resistance gene and a recessive resistance gene.

60. The gummy stem blight resistant *Cucumis melo* hybrid
5 plant according to claim 59, wherein said dominant resistance gene is selected from the group consisting of *Gsb1*, *Gsb2*, *Gsb4*, and *Gsb5*.

61. The gummy stem blight resistant *Cucumis melo* hybrid plant according to claim 59, wherein said resistance gene is a *gsb3* recessive resistance gene.

10 62. Pollen of the resistant hybrid plant according to claim 45.

63. An ovule of the resistant hybrid plant according to claim
45.

64. A tissue culture of regenerable cells of the hybrid plant
according to claim 45, wherein the tissue culture regenerates multiple progeny
15 plants capable of expressing all the morphological and physiological characteristics of said hybrid plant.

65. A gummy stem blight resistant *Cucumis melo* progeny plant, or its parts, regenerated from the tissue culture of claim 64.

66. A gummy stem blight resistant *Cucumis melo* offspring
20 plant, or its parts, wherein at least one ancestor of said offspring plant is the hybrid plant, or its parts, of claim 45.

67. Seed of a gummy stem blight resistant *Cucumis melo*
breeding line designated NY 01-190-3R, -7L, -9L (composite), a sample of said
seed having been deposited under ATCC accession number _____.

25 68. A *Cucumis melo* plant, or its parts, produced by the seed of claim 67.

69. Pollen of the plant of claim 68.

70. An ovule of the plant of claim 68.

71. A tissue culture of regenerable cells of the *Cucumis melo*
30 breeding line according to claim 67, wherein the tissue culture regenerates multiple progeny plants capable of expressing all the morphological and physiological characteristics of said hybrid *Cucumis melo* breeding line.

73. A *Cucumis melo* plant, or its parts, regenerated from the
5 tissue culture of claim 71 and capable of expressing all the morphological and
physiological characteristics of said *Cucumis melo* breeding line.